C L A I M S

1. An unascertained water occurrence distribution estimating device characterized by comprising unascertained water occurrence distribution estimating means for outputting an unascertained water occurrence distribution in each district, in which an occurrence distribution of unascertained water flowing into a sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in said each district and unascertained water amount function information at a base point located downstream of said each district, said unascertained water occurrence distribution estimating means including first processing means for performing a pattern matching analysis between unascertained water occurrence function information in said each district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and second processing means for outputting a pattern matching degree for said each district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in said each district.

2. An unascertained water occurrence distribution estimating device according to claim 1, characterized in that the unascertained water occurrence function information includes rainfall amount data representing a time-series change in an amount of rainfall in a district of interest, and the unascertained water occurrence amount function information includes unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

3. An unascertained water occurrence distribution estimating device according to claim 2, characterized in that the pattern matching degree comprises a correlation value between the rainfall amount data and the unascertained water amount data.

4. An unascertained water occurrence distribution estimating device according to claim 3, characterized in that said first processing means calculates the correlation value by correcting a difference in time required for unascertained water to reach the base point from the district of interest.

5. An unascertained water occurrence distribution estimating device according to claim 3, characterized in that said first processing means calculates correlation values while sequentially shifting temporal positions of the rainfall amount data and unascertained water amount data, and selects a

maximum value of the correlation values as a correlation value in the district of interest.

6. An unascertained water occurrence distribution estimating device according to claim 3, characterized by further comprising unascertained water calculating means for calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point in a non-rainfall weather.

7. An unascertained water occurrence distribution estimating device according to claim 1, characterized by further comprising contour information calculating means for calculating a pattern matching degree around said each district by performing interpolation computation using a pattern matching degree in said each district as interpolation information, and outputting contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.

8. An unascertained water occurrence distribution estimating method characterized by comprising the unascertained water occurrence distribution estimating step of outputting an

unascertained water occurrence distribution in each district, in which an occurrence distribution of unascertained water flowing into a sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in said each district and unascertained water amount function information at a base point located downstream of said each district,

the unascertained water occurrence distribution estimating step including the first step of performing a pattern matching analysis between unascertained water occurrence function information in said each district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and the second step of outputting a pattern matching degree for said each district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in said each district.

9. An unascertained water occurrence distribution estimating method according to claim 8, characterized in that the unascertained water occurrence function information includes rainfall amount data representing a time-series change in an amount of

rainfall in a district of interest, and the unascertained water occurrence amount function information includes unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

10. An unascertained water occurrence distribution estimating method according to claim 9, characterized in that in the first step, as the pattern matching degree, a correlation value between the rainfall amount data and the unascertained water amount data is used.

11. An unascertained water occurrence distribution estimating method according to claim 10, characterized in that in the first step, the correlation value is calculated by correcting a difference in time required for unascertained water to reach the base point from the district of interest.

12. An unascertained water occurrence distribution estimating method according to claim 10, characterized in that in the first step, correlation values are calculated while temporal positions of the rainfall amount data and unascertained water amount data are sequentially shifted, and a maximum value of the correlation values is selected as a correlation value in the district of interest.

13. An unascertained water occurrence distribution estimating method according to claim 10,

characterized by further comprising the third step of calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point in a non-rainfall weather.

14. An unascertained water occurrence distribution estimating method according to claim 8, characterized by further comprising the fourth step of calculating a pattern matching degree around said each district by performing interpolation computation using a pattern matching degree in said each district as interpolation information, and outputting contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.

15. A recording medium characterized by recording a program for causing a computer for an unascertained water occurrence distribution estimating device, which outputs an unascertained water occurrence distribution in each district, in which an occurrence distribution of unascertained water flowing into a sewer is to be estimated, on the basis of a comparison result between unascertained water occurrence function information in said each district and unascertained water amount function information at a base point

located downstream of said each district, to execute the first step of performing a pattern matching analysis between unascertained water occurrence function information in said each district, which is generated from unascertained water occurrence factor information in a district of interest which includes an amount of rainfall in the district of interest, and the unascertained water amount function information including an amount of unascertained water at the base point, and the second step of outputting a pattern matching degree for said each district which is obtained by the pattern matching analysis as an unascertained water occurrence distribution in said each district.

16. A recording medium according to claim 15, characterized in that the program makes the unascertained water occurrence function information include rainfall amount data representing a time-series change in an amount of rainfall in a district of interest, and makes the unascertained water occurrence amount function information include unascertained water amount data representing a time-series change in an amount of unascertained water at the base point.

17. A recording medium according to claim 16, characterized in that the program uses a correlation value between the rainfall amount data and the unascertained water amount data as the pattern matching degree in the first step.

18. A recording medium according to claim 17, characterized in that the program calculates the correlation value by correcting a difference in time required for unascertained water to reach the base point from the district of interest in the first step.

19. A recording medium according to claim 17, characterized in that the program calculates correlation values while sequentially shifting temporal positions of the rainfall amount data and unascertained water amount data, and selects a maximum value of the correlation values as a correlation value in the district of interest in the first step.

20. A recording medium according to claim 17, characterized in that the program further comprises the third step of calculating the unascertained water amount data from a difference between sewage water amount data representing a time-series change in an amount of sewage water at the base point and non-rainfall sewage water amount data representing a time-series change in an amount of sewage water at the base point in a non-rainfall weather.

21. A recording medium according to claim 15, characterized in that the program further comprises the fourth step of calculating a pattern matching degree around said each district by performing interpolation computation using a pattern matching degree in said each district as interpolation information, and outputting

contour information representing the unascertained water occurrence distribution by using the obtained interpolation information.